

a check in the amount of \$55.00 for payment of the fee associated with this Petition, as set forth in 37 C.F.R. § 1.17, and authorization for the Commissioner to charge any additional fee or to credit any overpayment in connection with this Petition to Deposit Account No. 50-0836.

IN THE CLAIMS:

Please amend the claims such that they read as follows:

*Sub F3*  
1. (Thrice Amended) A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining at least two sets of delineated sexual lines from a plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female or seed developmental stages relative to development of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets of delineated sexual lines, recovering seed from the hybridization, sowing said seed, and selecting hybrid lines that express apomixis.

*Sub F4*  
2. (Once Amended) The method of claim 1 wherein the differentiation in flowering responses occurs within a member of the group consisting of short-day plants, long-day plants, dual-

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day-length plants, intermediate-day-length plants,  
ambiphotoperiodic plants, and day-neutral plants.

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3. (Twice Amended) The method of claim 1 wherein the  
differentiation in flowering responses occurs across at least one  
member of the group consisting of short-day plants, long-day  
plants, dual-day-length plants, intermediate-day-length plants,  
ambiphotoperiodic plants, and day-neutral plants.

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5. (Once Amended) The method of claim 1 wherein  
differentiation in start times and durations of female or seed  
developmental stages occurs within a member selected from the group  
consisting of archesporium formation, megasporogenesis, and  
megagametogenesis, and early embryony.

6. (Once Amended) The method of claim 1 wherein  
differentiation in start times and durations of female or seed  
developmental stages occurs across at least one member selected  
from the group consisting of archesporium formation,  
megasporogenesis, and megagametogenesis, and early embryony.

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7. (Once Amended) The method of claim 1 wherein  
differentiation in start times and durations of female or seed

developmental stages is selected for as a trait in a plant breeding step.

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9. (Once Amended) The method of claim 1 wherein the hybrid lines comprise genomes from each set of delineated lines.

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17. (Thrice Amended) A method for obtaining apomictic plants from sexual plants comprising:

(a) identifying divergence in flowering responses to various photoperiods within a plant species or group of related plant species;

(b) obtaining two sets of lines of said plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods;

(c) identifying within and between said sets of lines divergence in start times and durations of female or seed developmental stages relative to development of nongametophytic ovule and ovary tissues;

(d) obtaining two sets of delineated sexual lines of said species or group of related species that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female or seed developmental stages relative to development of nongametophytic ovule and ovary tissues; and

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(e) producing hybrid lines that express apomixis by hybridizing said two sets of delineated sexual lines, recovering seed from the hybridization, sowing said seed, and selecting said apomictic hybrid lines.

18. (Thrice Amended) A method for obtaining aposporic, diplosporic, or polyembryonic plants from sexual monocotyledonous or dicotyledonous plants comprising:

(a) identifying divergence in flowering responses to various photoperiods within a plant species or group of related plant species;

(b) obtaining two sets of lines of said plant species or group of related plant species that are differentiated by their flowering responses to various photoperiods;

(c) identifying within and between said sets of lines divergence in start times and durations of female or seed developmental stages selected from the group consisting of archesporium formation, megasporogenesis, and megagametogenesis, and early embryony relative to the development of nongametophytic ovule and ovary tissues selected from the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall;

(d) obtaining two sets of delineated sexual lines of said species or group of related species that are differentiated by their

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(i) flowering responses to various photoperiods such that divergence occurs within a member or across more than one member selected from the group consisting of short-day plants, long-day plants, dual-day-length plants, intermediate-day-length plants, ambiphotoperiodic plants, and day-neutral plants, and

(ii) start times and durations of female or seed developmental stages selected from the group consisting of archesporium formation, megasporogenesis, megagametogenesis, and early embryony relative to the development of nongametophytic ovule and ovary tissues selected from the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall such that divergence occurs within one member or spans more than one member of such female developmental stages; and

(e) producing progeny by sexual reproduction or somatic cell hybridization of said two sets of delineated sexual lines such that apomixis is expressed in said progeny.

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23. (Amended) The method of claim 18 wherein said producing progeny is by sexual reproduction.

Please add the following new claims to the application:

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35. (New) A method for obtaining apomictic plants from sexual plants comprising:

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(a) obtaining at least two sets of delineated sexual lines from a plant species or group of related plant species selected from families that exhibit apomixis in nature and that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female or seed developmental stages relative to development of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets of delineated sexual lines, recovering seed from the hybridization, sowing said seed, and selecting hybrid lines that express apomixis.

36. (New) A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining at least two sets of delineated sexual lines from a plant species or group of related plant species selected from the grass family and that are differentiated by their flowering responses to various photoperiods and by their start times and durations of female or seed developmental stages relative to development of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets of delineated sexual lines, recovering seed from the hybridization, sowing said seed, and selecting hybrid lines that express apomixis.